

Message Text

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TO SECSTATE WASHDC 8286

C O N F I D E N T I A L SECTION 01 OF 03 OTTAWA 03895

E.O. 11652: GDS

TAGS: ENRG, TECH, MNUC, CA

SUBJECT: DRAFT U.S./CANADIAN AGREEMENT FOR COOPERATION

DEPARTMENT FOR OES/NET; EUR/CAN

DEPARTMENT PLEASE PASS DOE FOR HELFRICH AND SLAWSON;

NRC FOR LAFLEUR

REF: STATE 172327

1. SUMMARY: THERE IS A MUTUAL DESIRE ON THE PART OF THE
USG AND CANADA TO MAINTAIN THE CLOSE AND COMPREHENSIVE
COOPERATION IN THE NUCLEAR ENERGY FIELD, WHICH EVEN
PREDATES THE 1955 BILATERAL AGREEMENT FOR COOPERATION.
THUS IT WAS CONSIDERED IMPORTANT TO REVIEW SOME OF THE
CURRENT AND ANTICIPATED FUTURE AREAS OF TECHNICAL
EXCHANGE AND TO IDENTIFY SPECIFIC EXAMPLES OF EACH.
THESE EXAMPLES WERE SELECTED SOLELY WITH A VIEW TOWARD
HELPING THE DRAFTERS OF THE LANGUAGE OF THE NEW AGREE-
MENT TO IDENTIFY SOME BOUNDS ON THE POSSIBLE SCOPE OF
COOPERATION. ATTENTION WAS GIVEN TO CERTAIN AREAS IN
WHICH AN EXCHANGE MAY BE OF PARTICULAR ADVANTAGE TO THE
U.S. END SUMMARY.

2. IN THE MEETING HELD IN OTTAWA ON JUNE 29, 1978,
STATEMENTS WERE MADE BY SOME MEMBERS OF CANADIAN TEAM
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THAT THEY WOULD LIKE TO HAVE THE NEW AGREEMENT REFLECT
THE SPECIAL COLLABORATION AND BROAD AREAS OF COOPERATION
BETWEEN THE UNITED STATES AND CANADA WHICH HAVE EXISTED
IN THE PAST.

3. THE LEADER OF THE U.S. TEAM (NOSENZO), SAID THAT THE
OBJECTIVES OF THE U.S. AND CANADA WERE IDENTICAL, AND

THAT THERE WAS NO DESIRE ON THE PART OF THE U.S. TO REDUCE THE SCOPE OF COOPERATION FROM WHAT IT HAS BEEN SINCE 1955. HE SAID THAT THESE SPECIAL CONSIDERATIONS COULD BE HANDLED BY EITHER MODIFICATIONS OR SIDE NOTES TO THE AGREEMENT.

4. SINCE THAT MEETING, MOORADIAN (EXECUTIVE VICE PRESIDENT OF AECL) AND PRINCE (PRESIDENT OF AECB), AS WELL AS OTHER MEMBERS OF THEIR RESPECTIVE ORGANIZATIONS, HAVE TALKED TO THE SCICOUNS AND EMPHASIZED THEIR INTEREST IN MAINTAINING A BROAD SCOPE OF EXCHANGE. THE SUBJECT ALSO WAS MENTIONED DURING THE TIME OF THE VISIT OF HELFRICH, LEWIS, AND WILLIAMSON TO THE AECL'S CHALK RIVER FACILITY (JULY 18, 1978).

5. THE AREAS OF PAST AND POSSIBLE FUTURE COOPERATION HAVE BEEN EXAMINED BY THE SCICOUNS AND DISCUSSED WITH SOME OF THE STAFF MEMBERS OF THE AECB AND AECL WHO ARE FAMILIAR WITH THESE AREAS.

6. THESE AREAS OF COOPERATION CAN BE DIVIDED INTO THREE CATEGORIES: (A) THOSE WHICH NOW INVOLVE THE EXCHANGE OF CLASSIFIED INFORMATION; (B) THOSE WHICH MAY LEAD TO CLASSIFIED EXCHANGES IN THE FUTURE; AND (C) THOSE WHICH ARE UNCLASSIFIED BUT WHICH SHOULD BE CONTINUED OR EXPANDED BECAUSE THEY SHOULD BE OF SIGNIFICANT BENEFIT

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TO THE U.S.

7. THERE HAS BEEN NO ATTEMPT TO DEVELOP AN ALL-INCLUSIVE LIST, BUT RATHER TO SELECT EXAMPLES OF THE TYPES OF EXCHANGES WHICH WOULD BE EXPECTED TO TAKE PLACE IN THE FUTURE. THE LANGUAGE OF THE NEW NUCLEAR BILATERAL AGREEMENT SHOULD BE PERMISSIVE WITH RESPECT TO EXCHANGES

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IN THESE AREAS ("IF MUTUALLY AGREED").

8. IN THE FIRST CATEGORY (A), WOULD BE INCLUDED:

- (1) PHYSICAL SECURITY RESEARCH AND DEVELOPMENT. THE NRC IN THE U.S. AND THE AECB IN CANADA, BOTH ARE SUPPORTING WORK IN THIS AREA, INCLUDING TECHNIQUES AND EQUIPMENT DEVELOPMENT (SUCH AS TAMPER-PROOF DEVICES). THE WORK IN CANADA (E.G. BY THE RCMP) IS CLASSIFIED AS IS THE EFFORT IN THE U.S. (E.G. BY SANDIA). CLASSIFIED EXCHANGES ARE TAKING PLACE BETWEEN THE TWO GOVERNMENT AGENCIES AND ARE EXPECTED TO CONTINUE.

- (2) GENERAL SAFEGUARDS POLICIES AND AGREEMENT

NEGOTIATIONS - THERE ARE FREQUENT EXCHANGES BETWEEN THE U.S. AND CANADA ON THE STATUS OF THEIR SAFEGUARDS RELATIONS AND NEGOTIATIONS WITH THIRD COUNTRIES (E.G. TAIWAN; ARGENTINA). THE INFORMATION EXCHANGED IS CONSIDERED CLASSIFIED.

- (3) INFORMATION CLASSIFICATION AND SECURITY SAFEGUARDS AND STANDARDS - THERE WAS A CONFIDENTIAL AGREEMENT BETWEEN THE AECB AND THE U.S. ATOMIC ENERGY COMMISSION SIGNED ON JUNE 6, 1955 AND AMENDED MARCH 8, 1957 WHICH WAS DIRECTED TOWARD ESTABLISHING COMMON STANDARDS FOR

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CLASSIFICATION OF DOCUMENTS AND FOR CLEARANCES FOR INDIVIDUALS. THIS INSTRUMENT IS STILL USED BY THE AECB AS THE AUTHORITY FOR THEM TO CONTINUE TO EXCHANGE CLASSIFIED CANADIAN INFORMATION WITH THE U.S. (THERE STILL ARE HUNDREDS OF LETTERS AND DOCUMENTS IN THE ARCHIVES HERE, SOME THIRTY YEARS OLD, WHICH WERE INVOLVED IN CLASSIFIED EXCHANGES WITH THE U.S.) THERE IS A STRONG DESIRE TO RETIRE THEM IN A MANNER CONSISTENT WITH CURRENT U.S. POLICIES AND PRACTICES. ASSOCIATED WITH THIS IS A CONTINUATION OF EXCHANGES AIMED AT AN UPDATE OF THE COMMON INFORMATION CLASSIFICATION GUIDE.

- (4) PHYSICAL SECURITY ARRANGEMENTS - THE USE OF SYSTEMS AND DEVICES FOR PHYSICAL SECURITY AND THEIR LOCATIONS ARE CLASSIFIED IN CANADA. ("DON'T PUBLISH A BLUE-PRINT FOR POTENTIAL TERRORISTS".) A COMMONALITY OF CLASSIFICATION, AND OPEN DISCUSSIONS WITH THE COGNIZANT U.S.G. PEOPLE IS DESIRED.

- (5) A SUB-CATEGORY OF (4) IS THE NOTIFICATION OF SHIPMENTS AND TRANS-SHIPMENTS OF CRITICAL NUCLEAR MATERIALS ON A CONFIDENTIAL BASIS, BUT IN A MANNER WHICH

WILL ALLOW AN INFORMATION FLOW TO THE NECESSARY
AUTHORITIES, E.G. FBI AND RCMP.

- (6) CLASSIFIED PATENTS - THE AECB REVIEWS ALL ATOMIC
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ENERGY PATENTS AND HAS MULTI-LATERAL AND BILATERAL
ARRANGEMENTS TO HOLD CRITICAL PATENTS (E.G. ON ENRICH-
MENT PROCESSES) IN "SECRECY", AND TO DECLASSIFY OTHERS.
THIS IS AN IMPORTANT AREA OF EXCHANGE.

9. IN THE SECOND CATEGORY (B) ARE:

- (1) ANTI-PROLIFERATION TECHNIQUES - FROM THE INFCE
STUDIES OF ADVANCED REACTOR FUEL CYCLES WHICH ARE
PROLIFERATION-RESISTANT, THERE MAY BE DEVELOPMENT
PROGRAMS EMERGE ON TECHNIQUES FOR "DE-NATURING" POTENTIAL
WEAPONS MATERIALS. THE DEVELOPMENT AND EVALUATION OF
SUCH PROCESSES MAY REQUIRE THE EXCHANGE OF CLASSIFIED
INFORMATION WITH CANADA.

- (2) TRITIUM SEPARATION AND HANDLING - WORK HAS
BEEN UNDERWAY FOR SOME TIME AT CHALK RIVER (CRNL) AND
AT THE FACILITIES OF ONTARIO HYDRO, TO DEVELOP BETTER
METHODS OF SEPARATING TRITIUM FROM HEAVY WATER AND TO
DEVELOP TECHNIQUES FOR THE SAFE HANDLING AND DISPOSAL
OF LARGE QUANTITIES OF TRITIUM. THERE HAS BEEN AN
EXCHANGE IN THE PAST BETWEEN THE CRNL AND DOE'S MOUND
LABORATORY.

- IN THE FUTURE, IT IS ANTICIPATED THAT THERE MAY BE
A MUTUALLY BENEFICIAL EXCHANGE INVOLVING CANADIAN
DEVELOPMENTS ON IMPROVED CATALYSTS (FOR THE SEPARATION
OF TRITIUM FROM HEAVY WATER) AND THE U.S. TECHNIQUES
USED FOR HANDLING LARGE QUANTITIES OF TRITIUM. THE
QUESTION OF "DISPOSAL" OF TRITIUM ALSO MIGHT BE CON-
SIDERED IN SUCH AN EXCHANGE.

- (3) ELECTRO-NUCLEAR BREEDING - FOR SOME YEARS THE
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AECL HAS HAD A HIGH ENERGY PHYSICS PROGRAM DIRECTED
TOWARD THE DEVELOPMENT OF AN INTENSE NEUTRON GENERATOR
(ING). ALTHOUGH THEY WERE NEVER GIVEN FUNDS TO REALLY
PUSH THIS PROGRAM, THEY HAVE BEEN "BOOT-STRAPPING"
COMBINATIONS OF PARTICLE ACCELERATORS TO THE POINT

WHERE THEY CAN PRODUCE SIGNIFICANT NEUTRON FLUXES BY SPALLATION PROCESSES. THERE HAS BEEN COOPERATION IN THIS AREA WITH LOS ALAMOS AND OTHER LABORATORIES. SINCE DEVICES OF THIS TYPE OFFER THE POTENTIAL OF LARGE NEUTRON SOURCES WHICH COULD BE USED BY OTHER NATIONS TO PRODUCE WEAPONS MATERIALS, THIS PROGRAM MAY BECOME CLASSIFIED.

- (4) CONTINUED AVAILABILITY OF NRX AND NRU TEST LOOPS - AT ONE TIME THE U.S. NAVY PROGRAM PROVIDED FACILITIES AND SUPPORT FOR SEVERAL TEST LOOPS IN THE NRX AND NRU REACTORS. (SOME ARE STILL BEING USED FOR THE LIGHT WATER BREEDER REACTOR PROGRAM.) ALTHOUGH NO CLASSIFIED DATA IS NOW EXCHANGED, SINCE THE LATTER PROGRAM IS UNCLASSIFIED, THE LOOP FACILITIES AT CHALK RIVER ARE STILL UNIQUE AND IF A MAJOR PROBLEM IN WATER CHEMISTRY OR FUEL MATERIALS WERE TO EMERGE IN THE NAVY PROGRAM, IN THE FUTURE, THESE FACILITIES WOULD BE INVALUABLE. THUS IT APPEARS THAT IT MIGHT BE DESIRABLE TO HAVE A PROVISION IN THE NEW AGREEMENT WHICH WOULD PERMIT A CLASSIFIED EXCHANGE IN THIS AREA "IF MUTUALLY AGREED."

10. IN THE THIRD CATEGORY (C) ARE:

- (1) RADIATION HAZARDS ASSOCIATED WITH WATER LEAKAGE -

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BECAUSE OF THE VALUE OF HEAVY WATER, THE CANADIANS HAVE DEVELOPED THE BEST TECHNIQUES IN EXISTENCE FOR CONTROLLING THE LEAKAGE OF WATER FROM THEIR REACTORS. WITH THE PRESSURE IN THE U.S. AND CANADA TO LOWER OCCUPATIONAL RADIATION EXPOSURE LIMITS, AN EXCHANGE WITH CANADA ON METHODS AND EQUIPMENT WHICH CAN BE USED TO REDUCE

EXPOSURES BY TIGHTER CONTROL OF WATER LEAKAGE IN POWER REACTORS SHOULD BE OF SIGNIFICANT BENEFIT TO THE U.S.

- (2) ADVANCED FUEL CYCLE DEVELOPMENT - CANADA HAS POSTPONED ITS PLAN-TO PROCEED WITH A PILOT PLANT, FOLLOWED LATER BY A FULL-SCALE PLANT FOR THE SEPARATION OF PLUTONIUM AND URANIUM-233, AND WITH ITS PLANS FOR A PLANT TO FABRICATE MIXED OXIDE FUELS, PENDING THE OUTCOME OF THE INFCE STUDY. HOWEVER, THEY ARE CONTINUING LABORATORY INVESTIGATIONS OF SUCH PROCESSES AND ARE STUDYING OTHER PROLIFERATION-RESISTANT CYCLES SUCH AS CO-PROCESSING. COOPERATION IN THIS AREA MIGHT BE EXPANDED.

- (3) ALTERNATE REACTOR CONCEPTS - THE AECL AND ONTARIO HYDRO ARE TAKING ANOTHER LOOK AT OTHER REACTOR SYSTEMS, SUCH AS THE ORGANIC-COOLED, HEAVY WATER-MODERATED, SLIGHTLY ENRICHED URANIUM REACTOR, WITH A VIEW TOWARD ACHIEVING LOWER OCCUPATIONAL RADIATION EXPOSURES AND HIGHER THERMAL EFFICIENCIES THAN WITH CONFIDENTIAL

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ALL-WATER SYSTEMS. THERE ONCE WAS A STRONG COOPERATIVE PROGRAM WITH CANADA ON ORGANIC-COOLED REACTORS AND THE DOOR SHOULD BE LEFT OPEN FOR FUTURE COOPERATION IN THIS AREA IF IT LOOKS PROMISING. OTHER ALTERNATE CONCEPTS MIGHT INCLUDE SLIGHTLY ENRICHED CANDU'S, AND A TANDEM LIGHT WATER/HEAVY CONCEPT FOR EFFICIENT URANIUM UTILIZATION.

- (4) HEAVY WATER PRODUCTION METHODS - IF THE USE OF HYDROGEN AS A NON-POLLUTING FUEL EVER BECOMES ECONOMICALLY FEASIBLE AND IT IS PRODUCED IN LARGE QUANTITIES, THIS WOULD MAKE IT POSSIBLE TO CONSIDER OTHER PROCESSES (THAN THE GS PROCESS) FOR THE SEPARATION OF DEUTERIUM, SUCH AS HYDROGEN/AMINE EXCHANGE OR ELECTROLYSIS/CATALYTIC EXCHANGE, WHICH COULD LEAD TO SIGNIFICANT COST REDUCTIONS IN HEAVY WATER MANUFACTURE.

- (5) WASTE DISPOSAL - UNDER A NEW JOINT PROGRAM BETWEEN THE FEDERAL GOVERNMENT AND THE PROVINCIAL GOVERNMENT OF ONTARIO, A PLAN HAS BEEN DEVELOPED WITH A SCHEDULE OF MILESTONES FROM 1978 TO THE 1990'S. THESE INCLUDE ROCK SCIENCE STUDIES, SITE SELECTION, REPOSITORY CONSTRUCTION, DEMONSTRATION WASTE BURIAL, AND EVALUATION. THE PRESENT AGREEMENT PROVIDES FOR COOPERATION IN THIS AREA, AND IT SHOULD BE CONTINUED AND PROBABLY EXPANDED. THIS IS A TOP PRIORITY PROGRAM IN CANADA.

- (6) REACTOR SAFETY-RELATED RESEARCH AND DEVELOPMENT -

THERE IS A GOOD EXCHANGE BETWEEN THE AECL AND THE NRC
IN THIS AREA AND THE AECL HAS BEEN APPROACHED BY THE
NRC ABOUT THE POSSIBILITY OF USING ONE OF THE LARGE
NRU LOOPS FOR FUEL "BURN-OUT" EXPERIMENTS. THE
COOPERATION BETWEEN THE EXPERIMENTERS AT THE NRTS TEST
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SITE AND AECL COULD BE EXPANDED.

11. COMMENT: THE AECL AND AECB, IN PARTICULAR, ARE
CONCERNED THAT THE PROPOSED NEW BILATERAL AGREEMENT
MIGHT BE RESTRICTIVE WITH RESPECT TO SCOPE OF TECHNICAL
EXCHANGE, AND BE ONEROUS IN ADMINISTRATION OF THE
RECIPROCAL SAFEGUARDS INSPECTION RIGHTS. THEY HOPE
THAT BY HAVING A) LANGUAGE IN THE AGREEMENT WHICH WILL
PERMIT A BROAD SCOPE OF EXCHANGE TO INCLUDE ANY AREA
OF MUTUAL INTEREST, B) GENERAL FACILITY LICENSES, AND
C) "VISITORS" RATHER THAN "INSPECTORS" ON EACH SIDE
TO VERIFY SAFEGUARDS, THE POTENTIAL PROBLEMS CAN BE
MINIMIZED.
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